

LinMot®

E100/1001 CONTROLLERS



Import Belgium & Luxembourg

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The linear motor technology for industrial applications

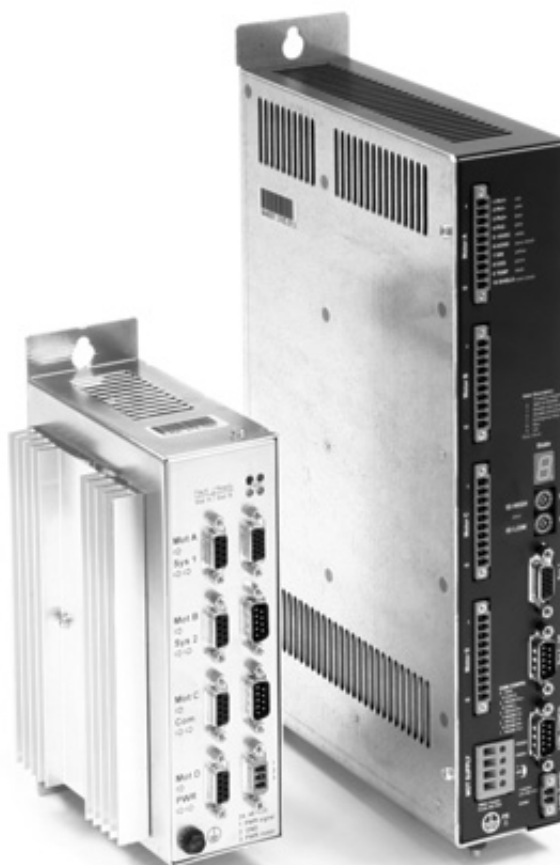
Notes :

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Servo Controller Series E100/E1001

The Series E100 servo controller and powerful Series E1001 are compact, one, two or four-axis position controllers with 16-bit position resolution and integrated power elements.

The controllers are suitable for simple and standard positioning tasks in the low to medium force range.



E100/E1001

Motor Interfaces

Series E100 and E1001 servo controllers allow control of up to four linear motors by one controller.

The linear motors themselves are operated without any complicated peripherals, such as end position monitors or reference switches.

The individual linear motors are either completely independently controlled, or they are synchronized with each other in special applications, in master booster or master gantry mode.

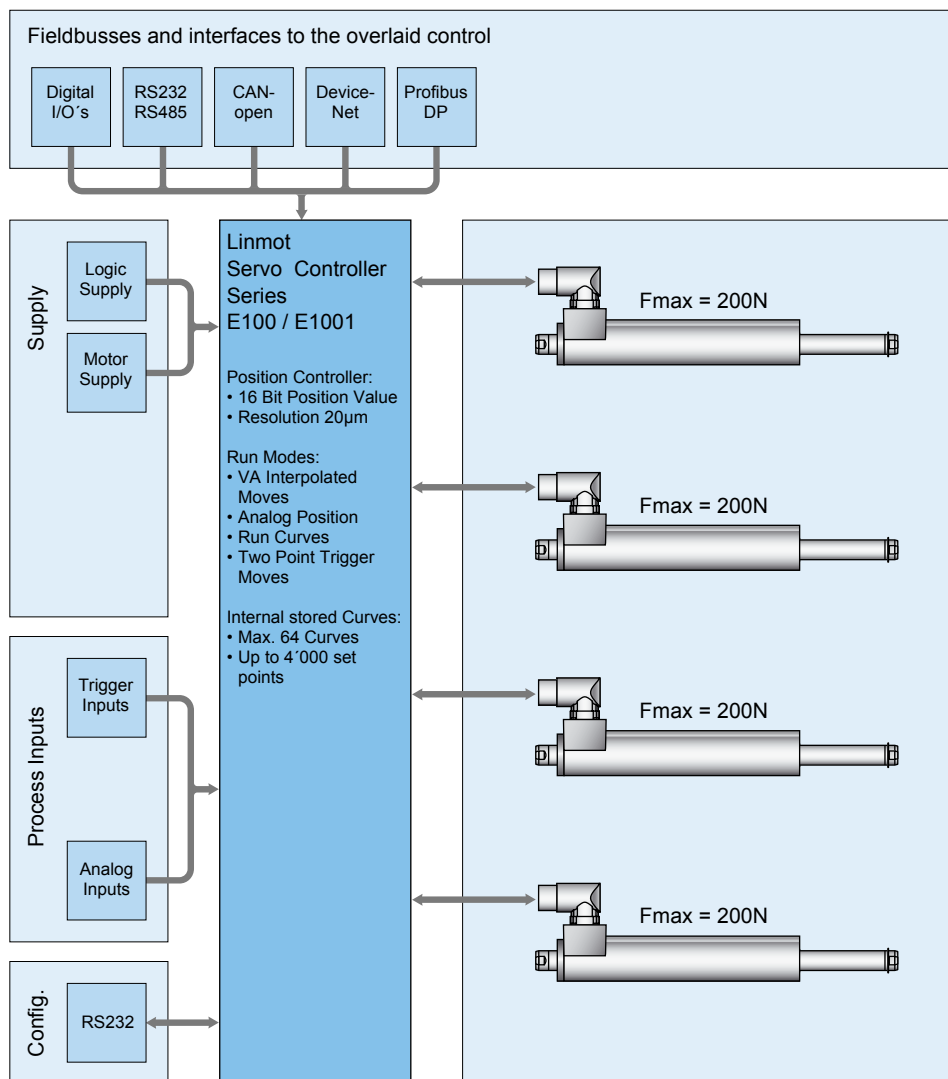
Connection to Machine Controller

The E100 and E1001 series servo controllers can be controlled through the following interfaces:

- Digital inputs and outputs
- Analog Inputs
- RS232 Serial Interface
- RS485 Serial Interface
- CANopen
- DeviceNet
- Profibus DP

Process Interfaces

As a fast process interface for direct reading of sensor signals, one combined analog/digital input per drive is available as an analog position target or a trigger input.



System Integration

Series E100/E1001 controllers are suitable for controlling linear motors that are operated without optional peripherals such as reference and end stop switches, external high-precision position sensors, or a holding brake.

Connection to the overlaid control is done via analog and digital signals, a serial connection, or fieldbuses.

The compact size is a great advantage of the Series E100/E1001 servo controllers, primarily for compound and multi-axis applications, with regard to installation space and effort.

Logic and Power Supply

The servo controllers have two separate power supplies for the logic and power elements.

In an E-stop and safe stop of the drive, only the power element supply is cut off from the controller. The logic supply and the controller continue to run.

This has the advantage that the controller and linear motor do not need to be reinitialized when the machine is restarted, since all process data, including the current position of the linear motor, are still up to date.

Servo Controller E400 in use



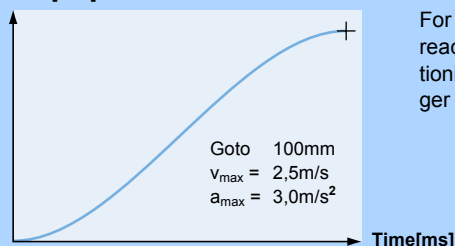
Configuration

Parameterization and configuration of the servo controller is done via the RS232 interface on the front side.

The menu-drive Windows interface LinMot Talk is used for configuration, with which up to four Axis can be configured simultaneously on one controller. LinMot Talk provides extensive debugging tools, such as an oscilloscope and an error inspector, for simple and rapid start-up of the Axis.

Absolute & Relative Positioning Commands

Stroke [mm]

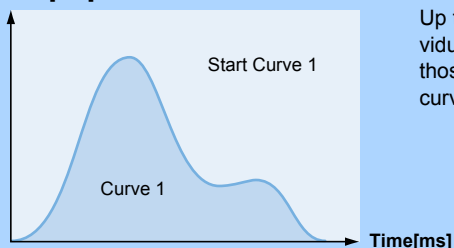


For direct position targets, using absolute or relative positioning, the desired position is reached according to acceleration and velocity-limited motion profiles (VA interpolator). Positioning commands can be invoked via the serial interface, fieldbusses, ETHERNET, or the trigger input.

Stroke range:	±630mm
Position Resolution:	20µm (16 Bit)
Velocity Resolution:	1.0µm/s (16 Bit)
Acceleration:	10.0µm/s ² (16 Bit)

Travel Along Time Curves

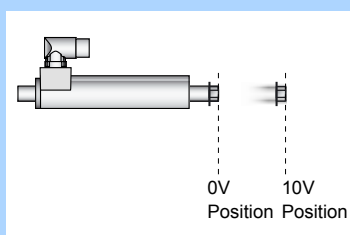
Stroke [mm]



Up to 99 different time curves can be stored Series E1100 controllers, with up to 16,000 individual waypoints. The motor can thus travel along time curves of any complexity, such as those generated by CAD programs and stored in the controller (Excel CSV format). The time curves can be invoked via the serial interface, fieldbusses, ETHERNET, or the trigger input.

Stroke range:	±630mm
Position Resolution:	20µm (16 Bit)
Motion profiles:	max. 64 curve profiles
Curve points:	max. 4'000points

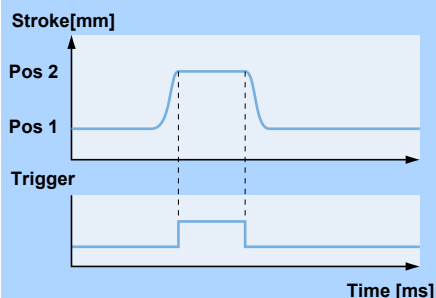
Analog Position Target



For an analog position target, the linear motor travels to a position proportional to the input voltage. The position is continuously read. In order to prevent uncontrolled jumps in position, the motor travels to the positions with a programmable maximum acceleration and velocity (VA interpolator).

Inputs:	1 analog input per motor
Voltage range:	0-10VDC
Resolution:	10 Bit
Scanning rate:	800µsec

Trigger 2 Point

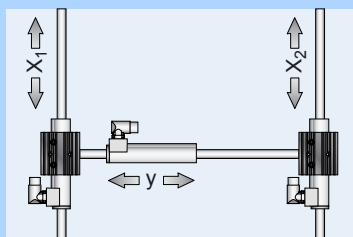


In the two-point trigger operating mode, two freely adjustable positions are controlled by the overarching controller, using a trigger signal.

One target value for the high level, and one for the low level of the digital input signal are stored in the drive electronics. If the signal at the drive electronics input changes, then the associated position is moved to at the programmed acceleration and speed.

Stroke range:	±630mm
Position Resolution:	20µm (16 Bit)
Velocity Resolution:	1.0µm/s (16 Bit)
Acceleration:	10.0µm/s ² (16 Bit)

Master Slave Synchronization



Using master-slave synchronization, two linear motors can be synchronized via a serial communications connection between two controllers, so that the overlaid controller can control them as a single axis.

Master Gantry Synchronization

Master gantry synchronization is used for portal designs with two parallel Axis at different locations.

Master Booster Synchronization

Master booster synchronization is used to double the force when two motors are mechanically rigidly connected to each other.

Internal Command Table

Multi Trigger

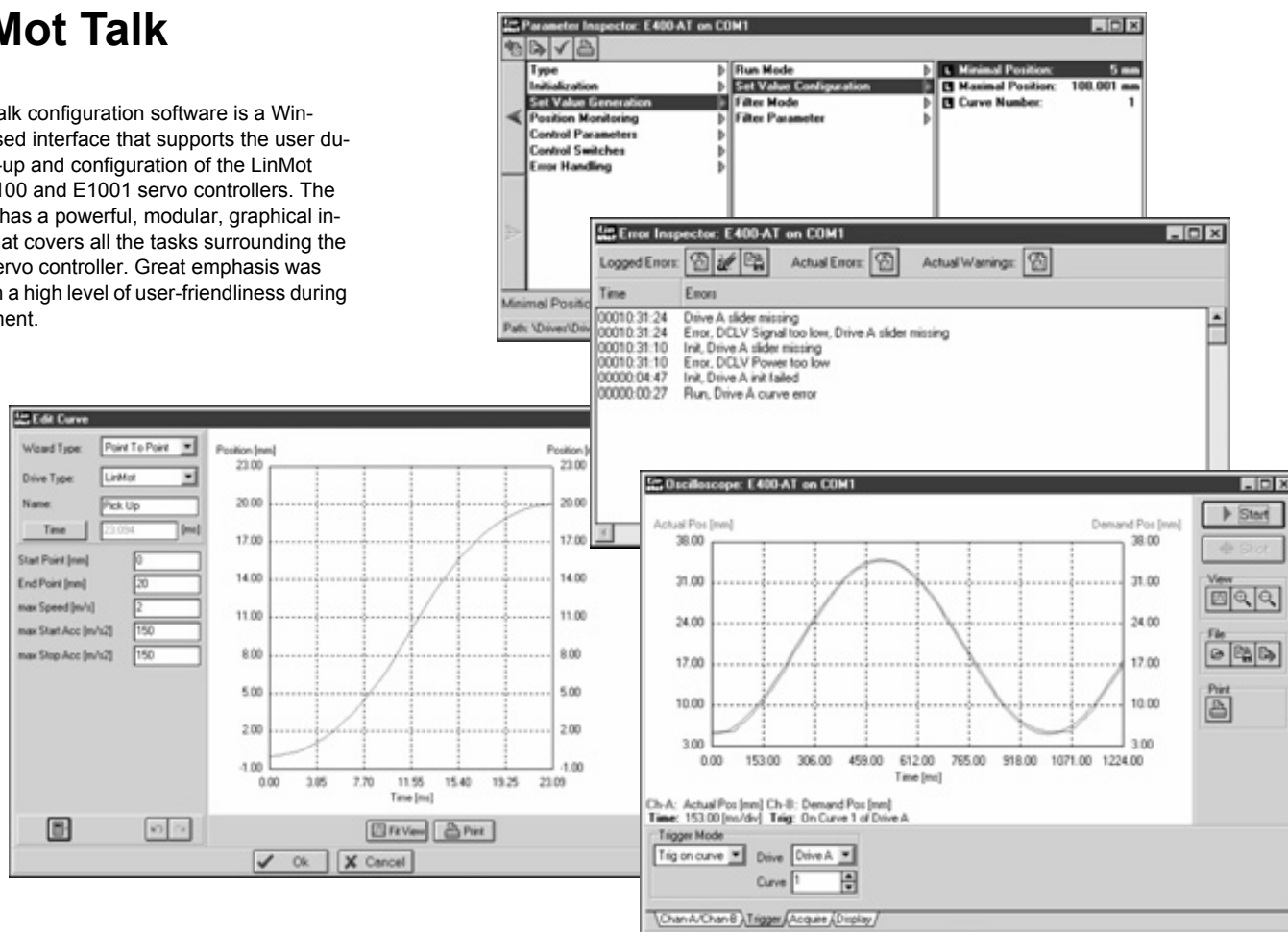
Command 1	Pos 125mm
Command 2	Pos 250mm
Command 3	Curve 1
Command 4	Pos -30mm
Command 5	Pos +12,5mm
...	
...	
Command 64	Pos -12,5mm

With the Multi-Trigger-Table, up to 64 positions or independent travel commands can be stored on the controller and addressed directly or indirectly via 4 digital inputs.

Digital inputs:	Max. 4
Interface:	Sys2
Scanning rate:	800µsec

LinMot Talk

LinMot Talk configuration software is a Windows-based interface that supports the user during start-up and configuration of the LinMot Series E100 and E1001 servo controllers. The software has a powerful, modular, graphical interface that covers all the tasks surrounding the LinMot servo controller. Great emphasis was placed on a high level of user-friendliness during development.



Start-up and Analysis Tools

Using the LinMot Talk PC interface, LinMot servo controllers are configured. Additionally, the drives can be monitored during operation with the machine running, and the current motion sequences, as well as earlier warnings and error messages, can be analyzed in detail (monitoring).

Simple Installation

For start-up and monitoring, the servo controller is connected to a PC via the RS232 interface on the front, using a 9-pole D-sub connector (1:1 Connection). Up to four Axis on one controller can be configured and monitored at the same time using LinMot Talk.

Integrated Documentation

After installation of LinMot Talk on the PC is complete, all manuals and installation instructions are available via the Windows Start Menu. The user thus always has the current documentation available to him.

Parameterization

Using the "Parameter Inspector," the controllers are parameterized in a simple manner. The user has a wide range of adjustments available for operating modes, error management, warning messages, and regulating parameters. Entire parameter sets can be stored, loaded, and printed out.

The "Curve Editor" allows creation of travel curves. In addition, existing curves can be loaded, stored, edited, combined, and printed out. Further, complex motion sequences can be generated as desired in MS Excel, and loaded into the controller.

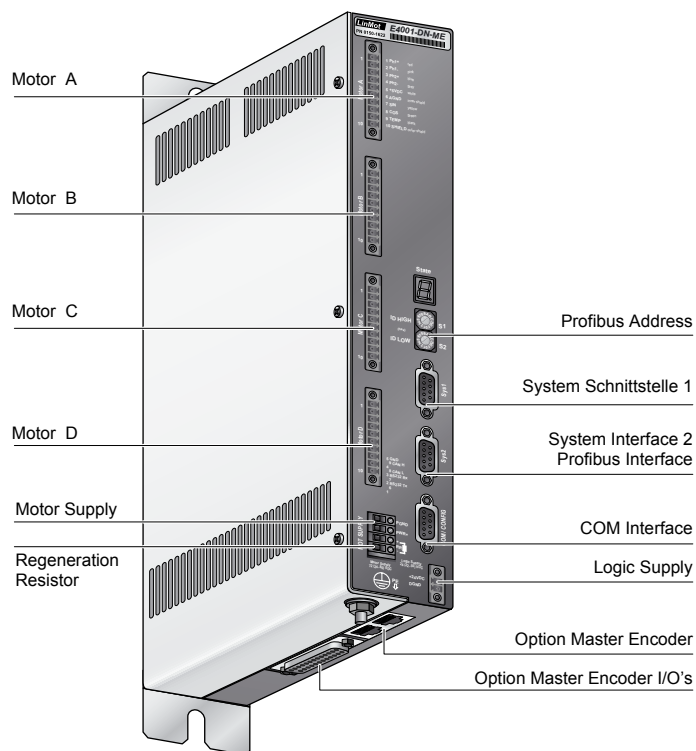
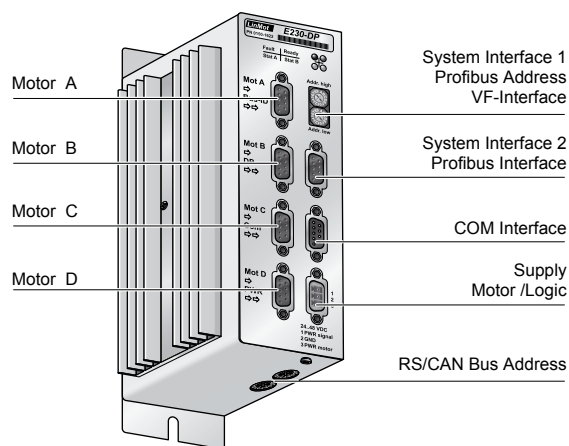
Optimization

The integrated oscilloscope helps the user during start-up and optimization of the drive system. Internal variables, such as the target and actual position, can be shown in real time on the screen, and then printed out. The displayed data can be stored in CSV format for further processing in MS Excel, or stored for documentation purposes.

Monitoring

Using the "Error Inspector," the user can read out stored errors, as well as the currently active warnings and error messages in the LinMot servo controller. The last 10 error messages are stored in non-volatile memory on the servo controller, together with the operating hours counter.

Further, the states of the inputs and outputs can be viewed in the "Error Inspector." This allows rapid and uncomplicated checking of signals from and to the overlaid control.

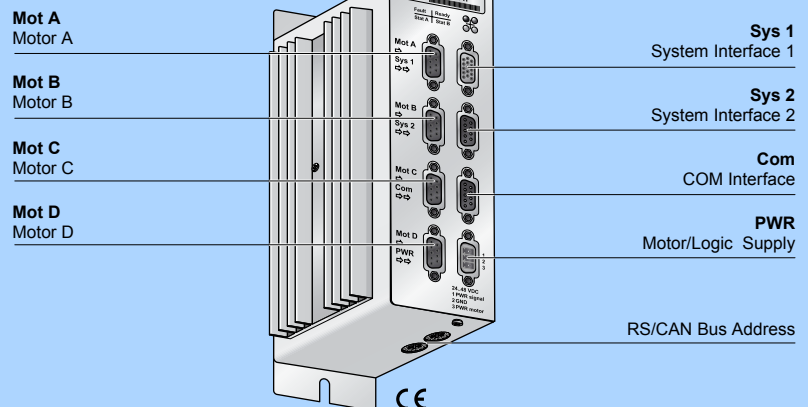


	E100-AT	E1001-AT	E100-MT	E1001-MT	E100-CO	E1001-CO	E100-DN	E1001-DN	E130-DP	E1031-DP
Interface										
System Interface 1	•	•	•	•	•	•	•	•		
System Interface 2	•	•	•	•	•	•	•	•		
Profibus Address		•		•		•		•	•	•
Profibus Interface									•	•
COM Interface	•	•	•	•	•	•	•	•	•	•
Supply Motor		•		•		•		•		•
Supply Logic		•		•		•		•		•
Supply Logic/Motor	•		•		•		•		•	
Regeneration Resistor		•		•		•		•		•
Bus Address RS/CAN	•	•	•	•	•	•	•	•		
Motor Connector DSUB-9	•		•		•		•		•	
Motor Connector MC01-P		•		•		•		•		•

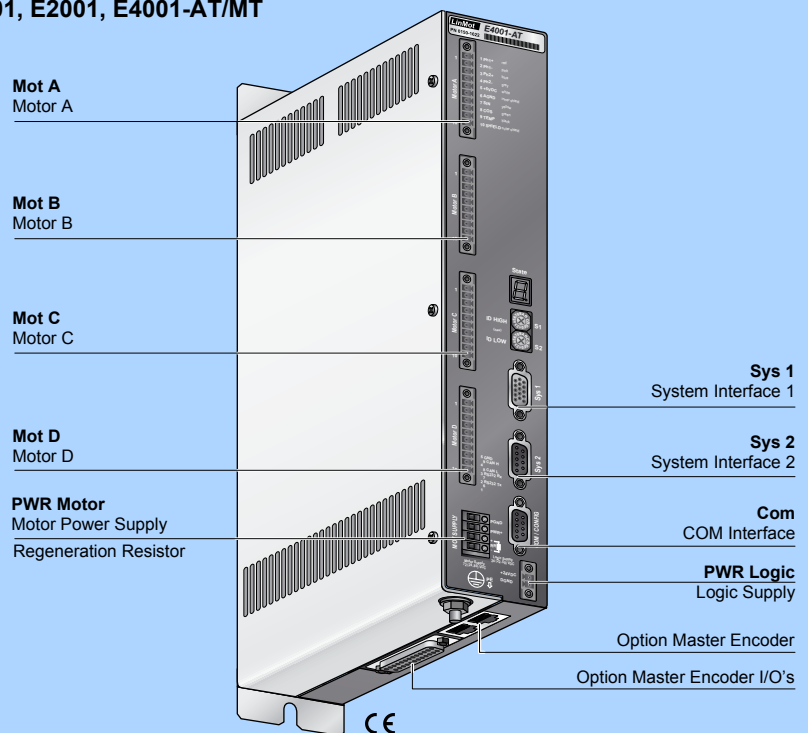
E100-AT	E100-MT
E200-AT	E200-MT
E400-AT	E400-MT
E1001-AT	E1001-MT
E2001-AT	E2001-MT
E4001-AT	E4001-MT

- ✓ Absolute & Relative Positioning Commands
- ✓ Travel Along Time Curves
- ✓ Trigger Mode: Two Point
- ✓ Trigger Mode: Curves
- ✓ Internal Multi Trigger Table (MT)
- ✓ Analog Position Target
- ✓ Master-Slave Synchronization
- ✓ Option: Customer-Specific Functions (MT)

E100, E200, E400-AT/MT



E1001, E2001, E4001-AT/MT



Analog Trigger Controller AT

The target position is provided by the overlaid control (PLC, industrial PC) as analog position signals, digital trigger signals, or directly via a serial interface.

End positions stored in the AT servo controller, or stored travel profiles, can be invoked using simple digital trigger signals.

The target position is provided as a voltage at the analog input of the servo controller. The position range associated with the voltage range at the analog input can be freely configured by the user.

Multi Trigger Controller MT

Multi trigger servo controllers allow direct programming of complex motion sequences, with up to 64 commands. The servo controller is actuated by the overlaid control via digital signals.

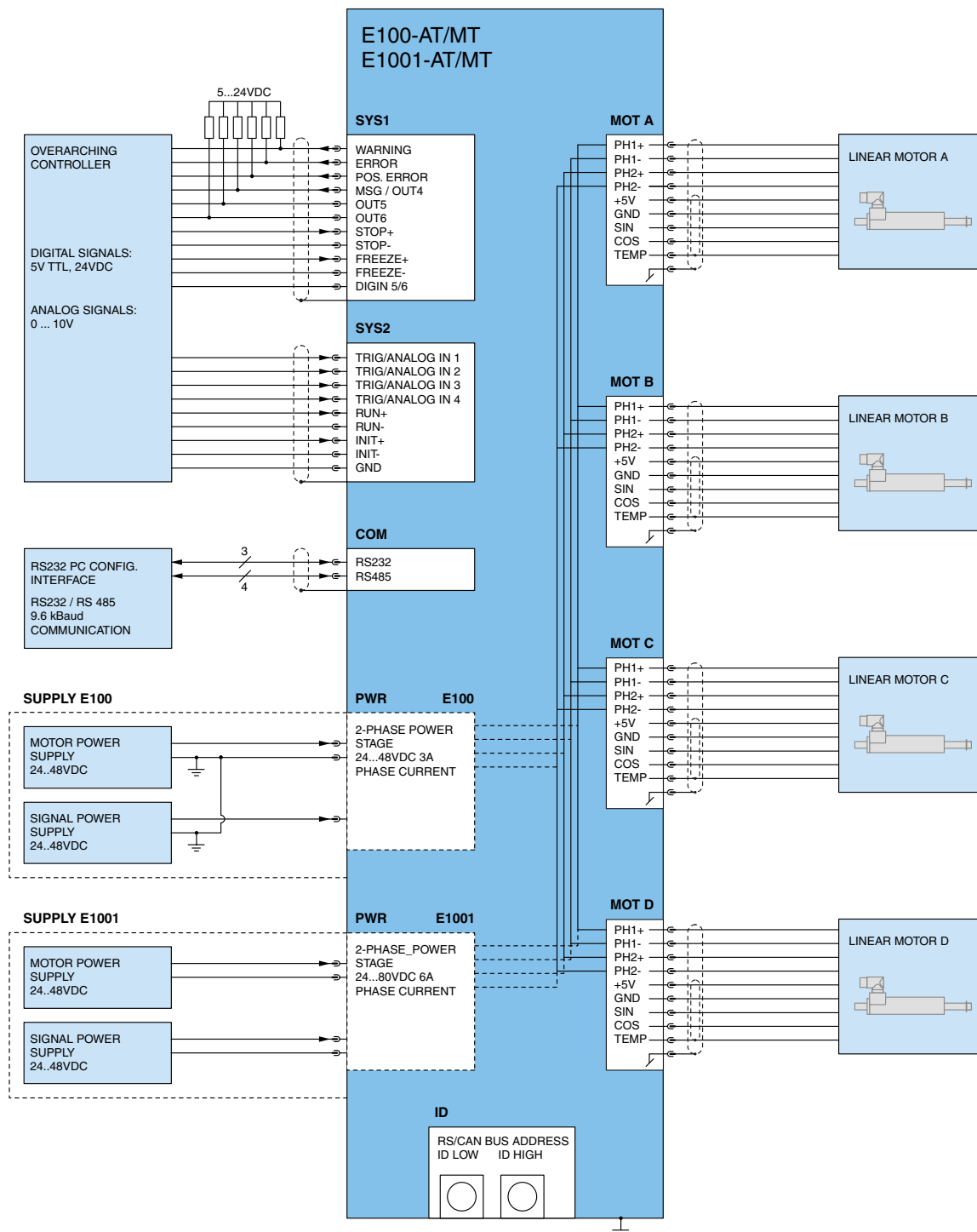
The commands for the individual Axis are stored in the state table in the servo controller. The individual states in the table are controlled by the overlaid control via digital signal addressing. As soon as a state is invoked by the overlaid control, the Axis carry out their defined motion or defined command.

Serial Interface RS232/RS485

Series E100/E1001E1001-AT and -MT servo controllers offer an ASCII protocol for serial communication over RS232 / RS484 with the overlaid control system.

The E100/E1001 controllers have two independent serial interfaces for RS232 and RS485. If the servo controller communicates with the RS485 interface with the overlaid control, the RS232 interface may be used the same time for configuration and debugging with configuration software LinMot Talk.

Adjustable Baud rates: 9.6-115.2kBaund

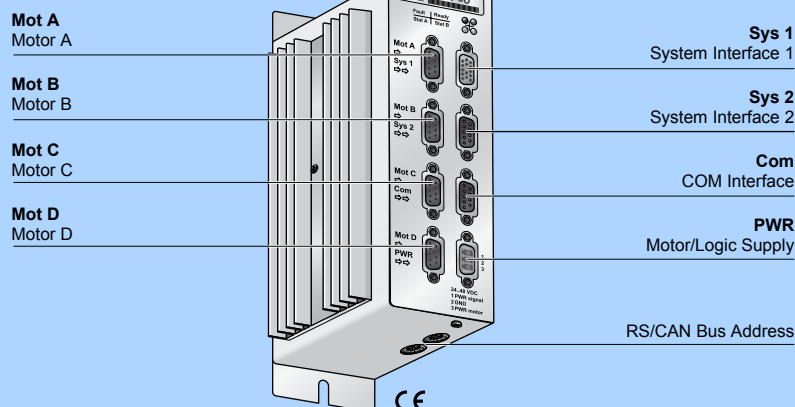


Item	Description	Part Number
E100-AT	AnalogTrigger Controller 1 Axis (48V/3A)	0150-1601
E200-AT	AnalogTrigger Controller 2 Axis (48V/3A)	0150-1602
E400-AT	AnalogTrigger Controller 4 Axis (48V/3A)	0150-1604
E1001-AT	AnalogTrigger Controller 1 Axis (72V/8A)	0150-2300
E2001-AT	AnalogTrigger Controller 2 Axis (72V/8A)	0150-2301
E4001-AT	AnalogTrigger Controller 4 Axis (72V/8A)	0150-2303
E100-MT	Multi Trigger Controller 1 Axis (48V/3A)	0150-1611
E200-MT	Multi Trigger Controller 2 Axis (48V/3A)	0150-1612
E400-MT	Multi Trigger Controller 4 Axis (48V/3A)	0150-1614
E1001-MT	Multi Trigger Controller 1 Axis (72V/8A)	0150-2304
E2001-MT	Multi Trigger Controller 2 Axis (72V/8A)	0150-2305
E4001-MT	Multi Trigger Controller 4 Axis (72V/8A)	0150-2307

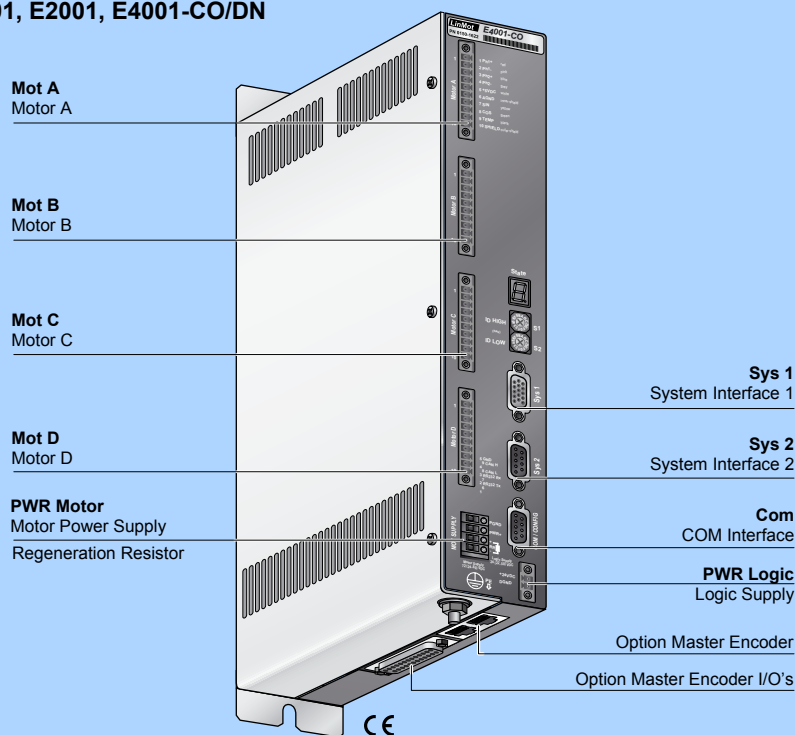
E100-CO	E100-DN
E200-CO	E200-DN
E400-CO	E400-DN
E1001-CO	E1001-DN
E2001-CO	E2001-DN
E4001-CO	E4001-DN

- ✓ Absolute & Relative Positioning Commands
- ✓ Travel Along Time Curves
- ✓ Trigger Mode: Two Point
- ✓ Trigger Mode: Curves
- ✗ Internal Command Table
- ✓ Analog Position Target
- ✓ Master-Slave Synchronization
- ✓ Option: Customer-Specific Functions

E100, E200, E400-CO/DN



E1001, E2001, E4001-CO/DN



CANopen

LinMot CO controllers, with integrated CANopen interface, support the CiA DS301 communication profile.

The following CANopen resources are available on the CO controllers: 1-5 T_PDO, 1-5 R_PDO 1 T_SDO, 1 R_SDO

The following protocols are supported by the CO controllers:

- Node Guarding
- PDO acyclic with inhibit time
- SDO Upload and Download
- NMT (Start, Stop, Enter PreOp, Reset Node, Reset Communication)
- Boot-Up Message

DeviceNet

Series DN controllers feature an integrated DeviceNet interface. With the DeviceNet interface, even complicated motion sequences can be realized with the highest possible flexibility.

The controller can be actuated and monitored via the DeviceNet connection. The following expanded fieldbus functions are available:

- Direct target position
- Invoke motion profiles
- Read and write access to parameters
- Monitoring internal parameters
- Diagnosis

"Explicit Messaging" The DeviceNet Servo Controllers support one "Explicit Messaging" connection per master.

"Polled IO"

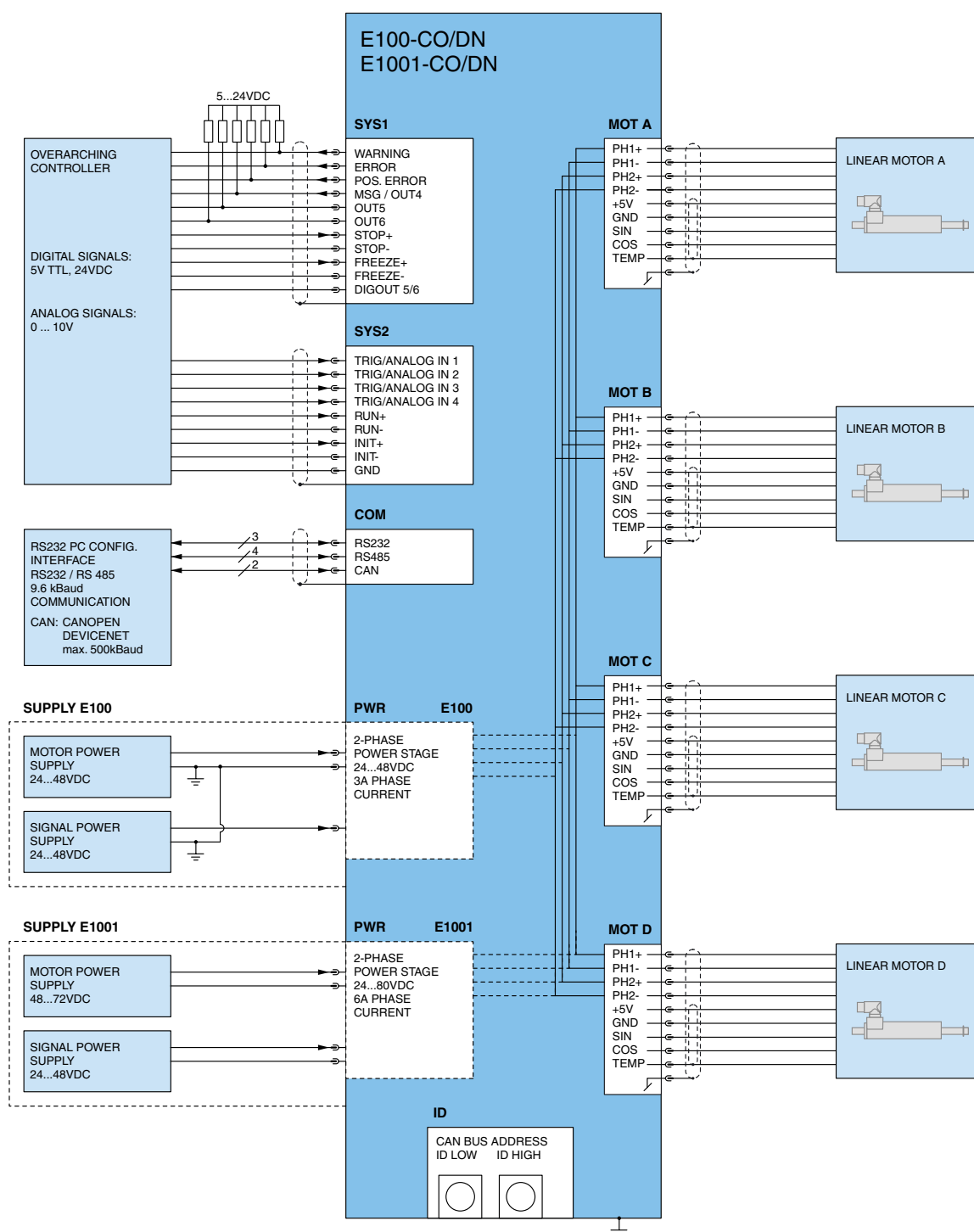
The master initiates data interchange with a "Polled IO" command.

"Change of State IO"

With this connection, the data is transferred only if the states or values have changed.

"Cyclic IO"

With the "Cyclic IO" connection, the data is transferred strictly cyclically.

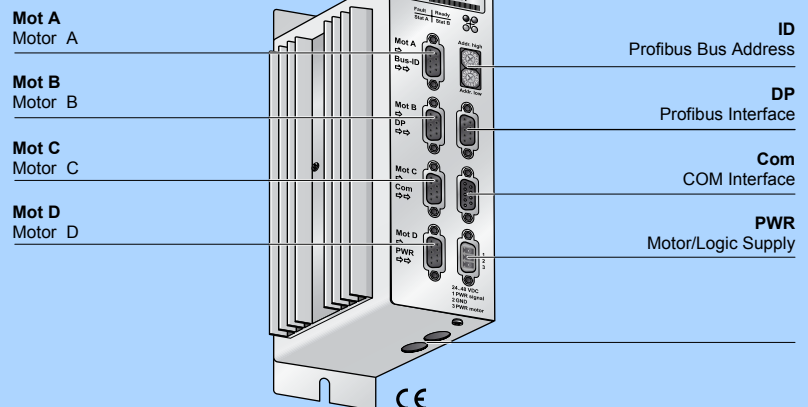


Item	Description	Part Number
E100-CO	CanOpen Controller 1 Axis (48V/3A)	0150-1669
E200-CO	CanOpen Controller 2 Axis (48V/3A)	0150-1670
E400-CO	CanOpen Controller 4 Axis (48V/3A)	0150-1672
E1001-CO	CanOpen Controller 1 Axis (72V/8A)	0150-2308
E2001-CO	CanOpen Controller 2 Axis (72V/8A)	0150-2309
E4001-CO	CanOpen Controller 4 Axis (72V/8A)	0150-2311
E100-DN	DeviceNet Controller 1 Axis (48V/3A)	0150-1641
E200-DN	DeviceNet Controller 2 Axis (48V/3A)	0150-1642
E400-DN	DeviceNet Controller 4 Axis (48V/3A)	0150-1644
E1001-DN	DeviceNet Controller 1 Axis (72V/8A)	0150-2312
E2001-DN	DeviceNet Controller 2 Axis (72V/8A)	0150-2313
E4001-DN	DeviceNet Controller 4 Axis (72V/8A)	0150-2315

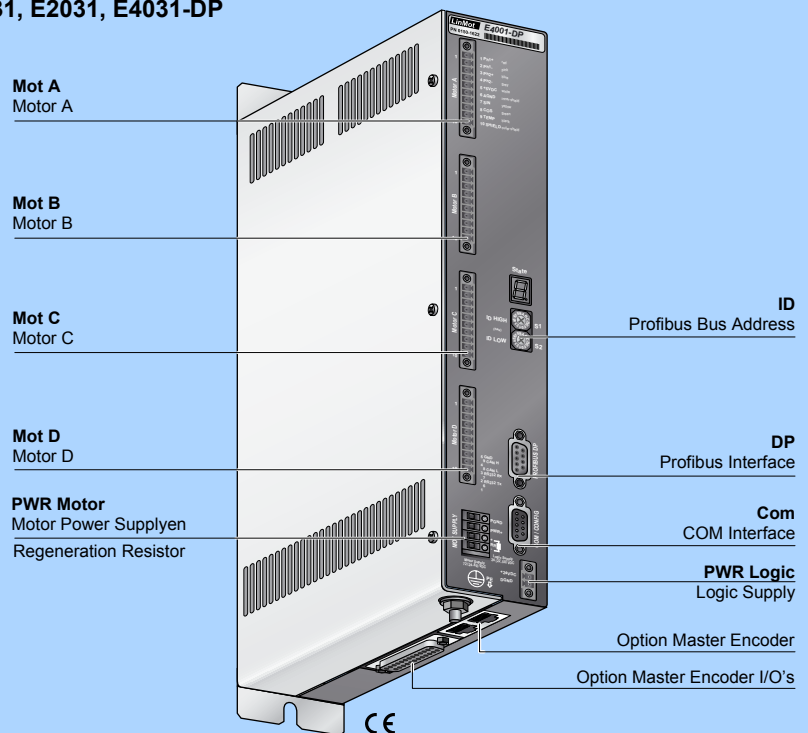
E130-DP
E230-DP
E430-DP
E1031-DP
E2031-DP
E4031-DP

- ✓ Absolute & Relative Positioning Commands
- ✓ Travel Along Time Curves
- ✗ Trigger Mode: Two Point
- ✗ Trigger Mode: Curves
- ✗ Internal Command Table
- ✗ Analog Position Target
- ✓ Master-Slave Synchronization
- ✓ Option: Customer-Specific Functions

E130, E230, E430-DP



E1031, E2031, E4031-DP



Profibus DP

Series DP servo controllers feature an integrated PROFIBUSDP interface. PROFIBUS-DP provides the user with a standardized fieldbus interface for rapid data interchange between the servo controller and the overlaid control.

With cyclical provision of target positions and other process data, the Profibus controllers are the ideal solution for applications with motions and sequences that change frequently, such as are required, for example, in flexible machines and systems for rapid format changes.

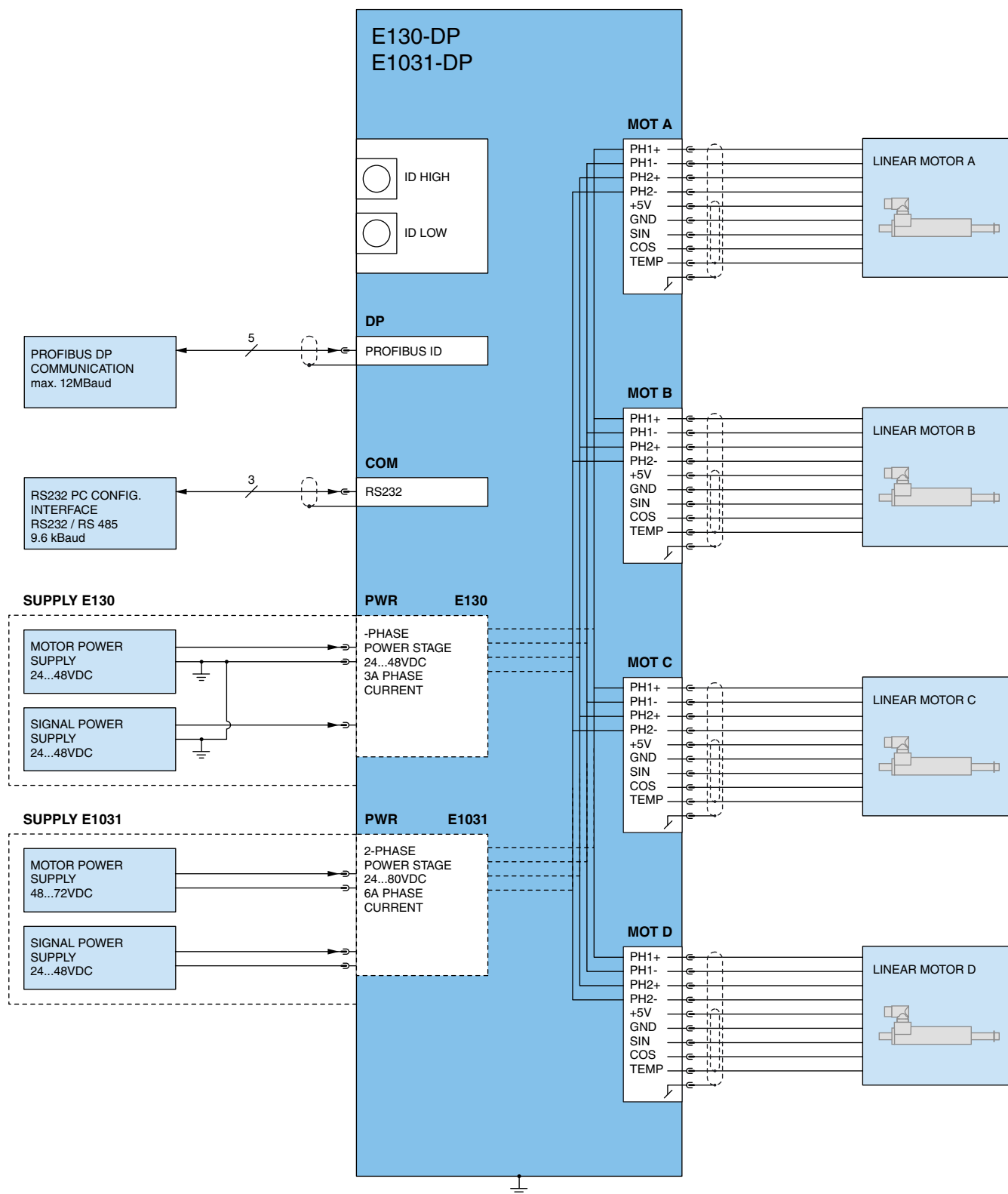
The Profibus interface supports all Baud rates from 9.6 Kbits/s to 12 Mbit/s. The maximum net data quantity exchanged in cyclical data traffic is 64 bytes per cycle. The smallest achievable bus cycle time is 100 µs. The structure and scope of cyclical data can be collected from any individual data modules into an overall data quantity when planning the system, whereby the data for the individually connected motors can be different.

A GSD device master file is provided for open planning in conformance with the standard.

The front-side 9-pin DSUB bus connector meets the PROFIBUS standard. It provides power for an external bus termination. A positive directional control signal is provided to control repeaters or optical fibers.

All signals on the PROFIBUS connector are galvanically separated.

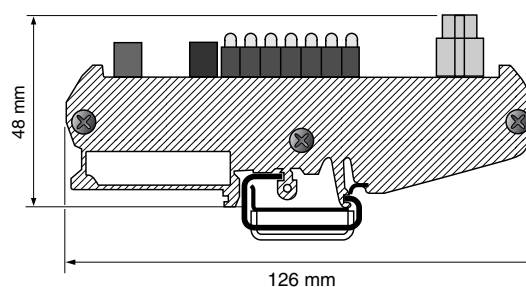
The PROFIBUS-DP address is set by two hex code switches (ID1 and ID2). All addresses permitted by the standard are supported (0..125).



Item	Description	Part Number
E130-DP	Profibus DP Controller 1 Axis (48V/3A)	0150-1621
E230-DP	Profibus DP Controller 2 Axis (48V/3A)	0150-1622
E430-DP	Profibus DP Controller 4 Axis (48V/3A)	0150-1624
E1031-DP	Profibus DP Controller 1 Axis (72V/8A)	0150-2316
E2031-DP	Profibus DP Controller 2 Axis (72V/8A)	0150-2317
E4031-DP	Profibus DP Controller 4 Axis (72V/8A)	0150-2319

Break Out Module

The Break Out Module for the AT and MT servo controllers leads all input and output signal from the SYS1 and SYS2 DSUB connectors to plug-type screw terminals.



Break Out Module

The Break Out Module is available in two versions, with a digital or analog interface.

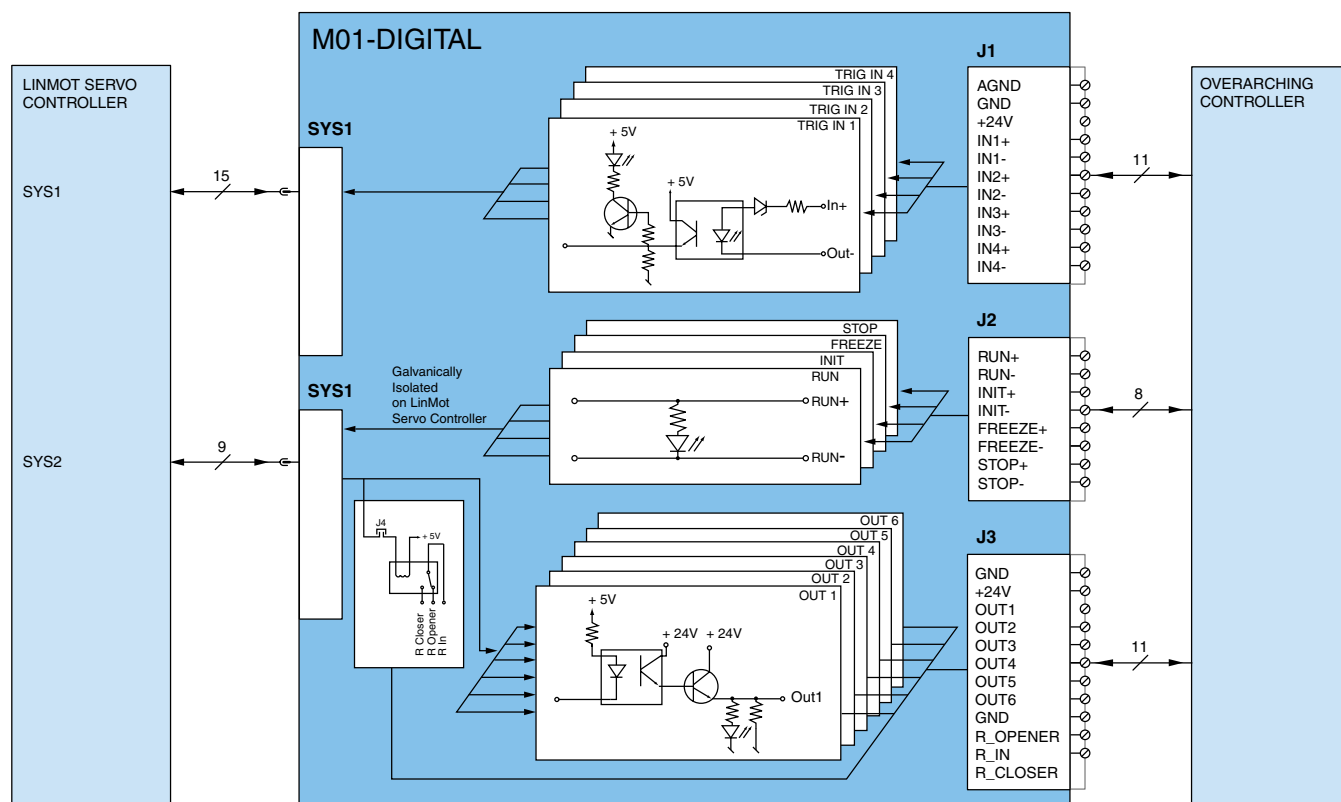
The Break Out Module is snapped onto the DIN rail directly in the electrical enclosure. Two tabs for screw mounting are also included.

Features:

- Plug-type screw terminals for all inputs and outputs
- Digital inputs, galvanically isolated, (24V/10mA)
- Digital outputs, galvanically isolated, (24V/0.5A)
- Relay output (48V/2A, max. 60W)
- LED status indicator for all inputs and outputs
- Analog input voltage -10...+10V for analog module.

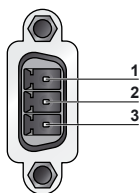
Cable & Connector Set

The connection cable to the servo controller and the plug-type screw terminals are available as a set.

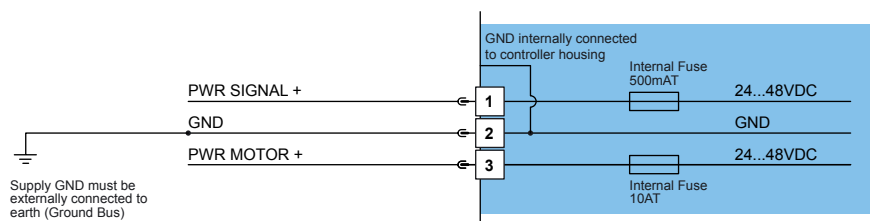


E100

Supply Motor/Logic



Power Connector
Logic/Motor
1.5 mm² (AWG16)



Supply

Supply Voltage Logic: 24...48VDC (absolute max. Rating 48VDC + 10%)
Supply Voltage Motor: 24...48VDC (absolute max. Rating 48VDC + 10%)

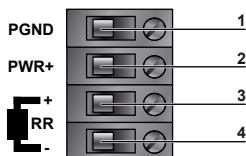
Motor Supply GND must be externally connected to earth



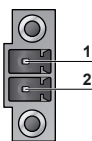
- By exceeding 52VDC supply voltage, the controller will go into error state.
- Power supply connectors must not be connected or disconnected while DC voltage is present.

E1001

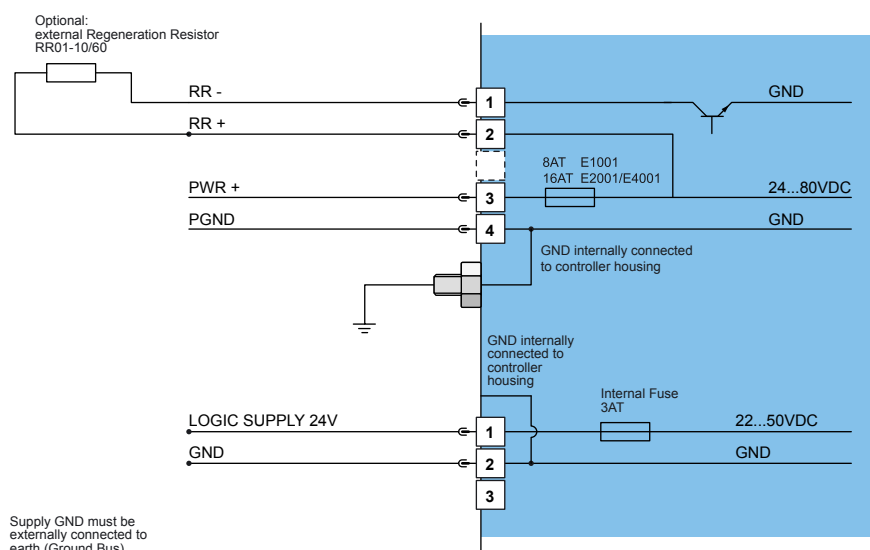
Supply Motor/Logic



Screw Terminals
2.5 mm² (AWG14)



Phoenix MC1,5/2-STF-3.81
0.25-1.5mm² (AWG24-16)



Supply:

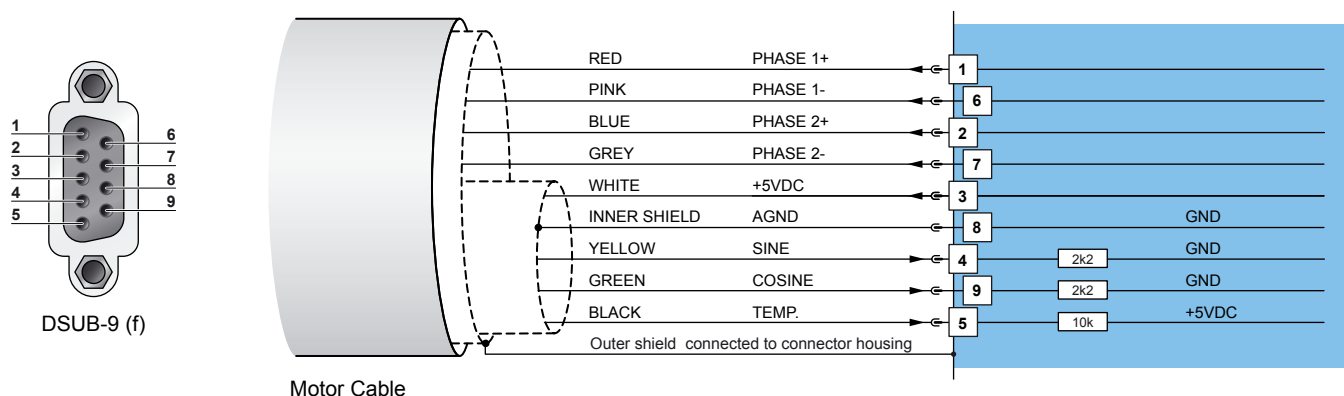
Supply Voltage Logic: 24...80VDC (absolute max. Rating 92VDC)
Supply Voltage Motor: 48...72VDC (absolute max. Rating 72VDC + 5%)

Motor and Logic Supply GND must be externally connected to earth

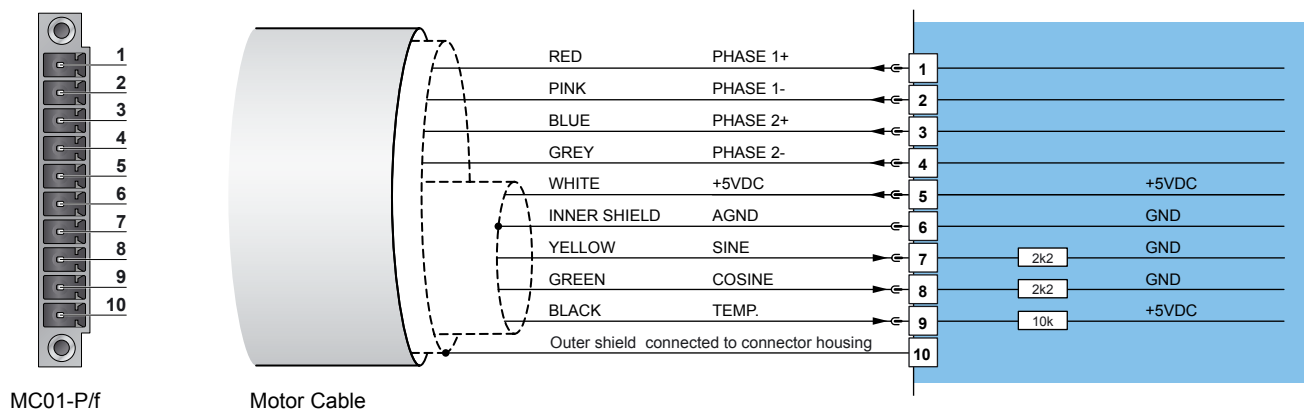


- By exceeding 92VDC motor supply voltage, the controller will go into error state.
- By exceeding 52VDC logic supply voltage, the controller will go into error state.
- Power supply connectors must not be connected or disconnected while DC voltage is present.
- It is recommended that the motor and the logic be supplied and controlled separately.

Mot A (B, C, D) Motor connector E100



Mot A (B, C, D) Motor connector E1001



Motor Cable

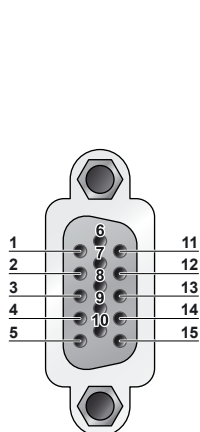
- Use only special double-shielded Linear Motor Cable (see motor accessories).
- LinMot offers a wide range of preassembled motor cable in standard and custom length (tested 1.5kV):
 - Standard Cable K05-...
 - High-Flex Cable KS05-...
 - Robot-Cable KR05-...
- Do NOT connect AGND (Pin 6) to ground or earth!
- Inner shield (AGND) and outer shield (earth) must be isolated to each other.
- Use +5V (Pin 3) and AGND (Pin 6) only for motor internal Hall Sensor supply (max. 100mA).



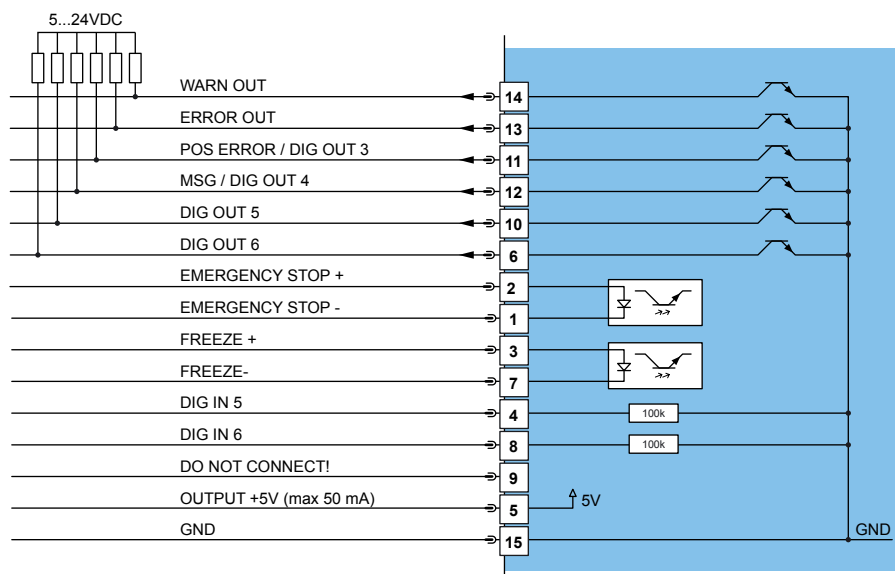
- Wrong Motor wiring may damage Linear Motors and/or Servo Controller.
If you are assembling motor cables by your own, double check motor wiring carefully before power up.
- Do not connect or disconnect the motors from controllers with voltage present.
Wait to connect or disconnect motors until all LinMot controller LED's have turned off.

SYS1

System interface 1



DSUB-15 (f)



Control Inputs: Stop (active low) / Freeze (active high)

Optical isolated inputs (Input voltage: 0 24V)

- for logical zero: input voltage < 2V
- for logical one: input voltage > 3.5V

Input current: < 20 mA (internally limited to 20 mA)

Update rate: 1.6 ms

Digital Inputs: Dig In 5 / Dig In 6

24VDC inputs, input resistance 100kOhm

- for logical zero: input voltage < 2V
- for logical one: input voltage > 3.5V

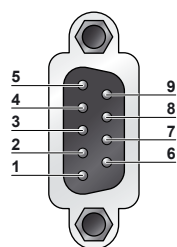
Digital Outputs: Pos Error Out / MSG / Error Out / Warn Out / Dig Out 5 / Dig Out 6

Open Collector max 24V / 50 mA

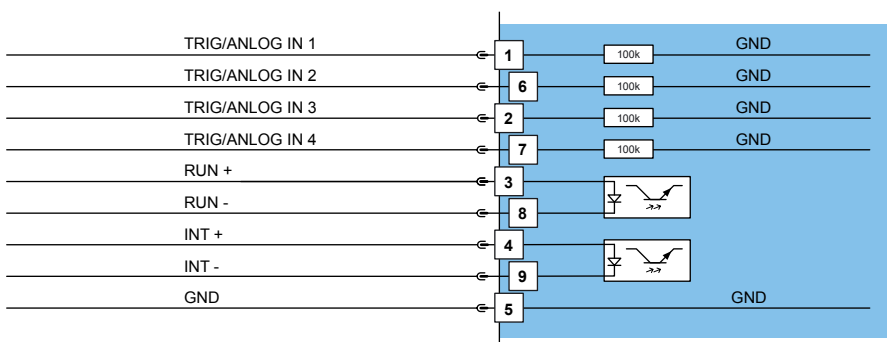
Typical pull-up Resistor R: for V+ = 5V supply: R=150 Ohm/0.25 W
for V+=24V supply: R=820 Ohm / 1W

SYS2

System interface 2



DSUB-9 (m)



Digital/Analog Input: Trig/Analog IN

Input can be used as analog inputs between 0 ... 10V (10 bit resolution) input resistance 100kOhm
or digital inputs (max. 24V, input resistance 100kOhm) for logical zero <2V,
for logical one >3.5V

Control Inputs: RUN (active high) / INIT (active high)

Optical isolated 24V inputs

Input voltage: 0 24V

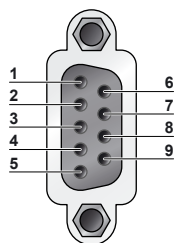
for logical zero <2V
for logical one >3.5V

Input current: < 20 mA (internally limited to 20 mA)

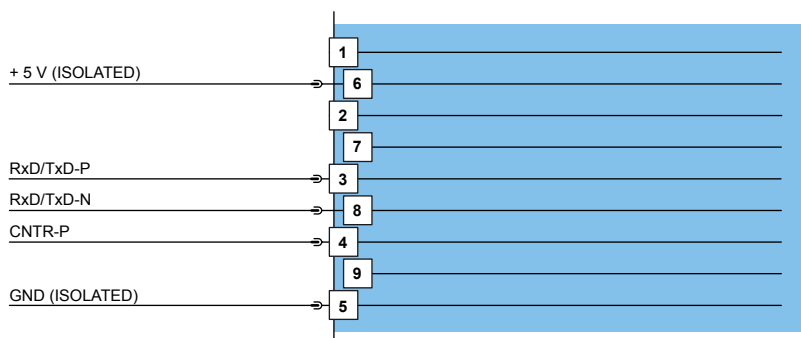
Update rate: 1.6 ms

DP

Profibus DP interface



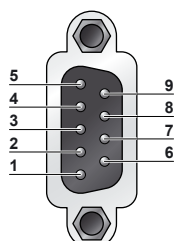
DSUB-9 (f)



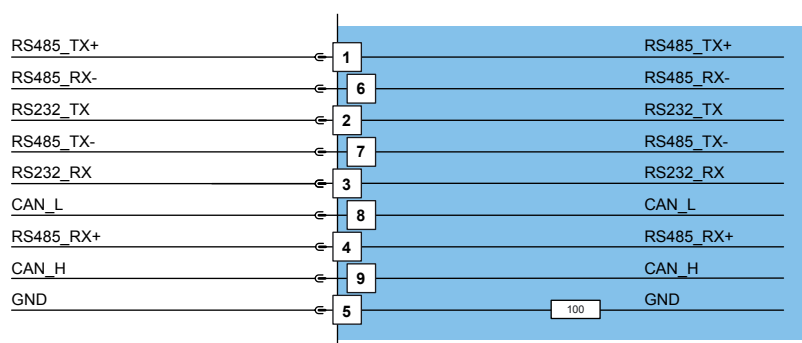
Isolated 5V output: max 50 mA

COM

Com interface



DSUB-9 (m)



RS232: Configuration on all Controllers: use 1:1 connection cable to PC

LED

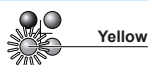
State display E100



Green

Ready Green:

READY: The system has started correctly

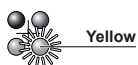


Yellow

Stat A Yellow:

STAT A : Coding for the actual operating state

The display of the various operating states is shown on the last page of this manual.



Yellow

Stat B Yellow:

STAT B: Coding for the actual operating state

The display of the various operating states is shown on the last page of this manual.



Red

Fault Red:

FAULT: An error has occurred

(In the state ERROR a blink code of the STAT LEDs A and B tells what the actual error is. The blink codes are explained in chapter 'Service' of the user Manual.)

DISPLAY

State display E1001



8 Segement Display

Output of operating states and error codes

Switched-Mode Power Supplies

115VAC / 230VAC



Item	Description	Part Number
S01-48/300	Switched-Mode Power Supply 48V/300W for Controller Series E100	0150-1941
S01-72/300	Switched-Mode Power Supply 72V/300W for Controller Series E1001	0150-1942
S01-72/600	Switched-Mode Power Supply 72V/600W for Controller Series E1001	0150-1943
SM01-300	Mounting part for 300W Switched-Mode Power Supply	0150-3040
SM01-600	Mounting part for 600W Switched-Mode Power Supply	0150-3041

Transformer Supply T01

3x230/280/400/480VAC



Item	Description	Part Number
T01-72/420...1500-Multi	Transformer Supply 3x230/280/400/480VAC, 50/60Hz, 420...1500W	see page 328

Control Box B01-04

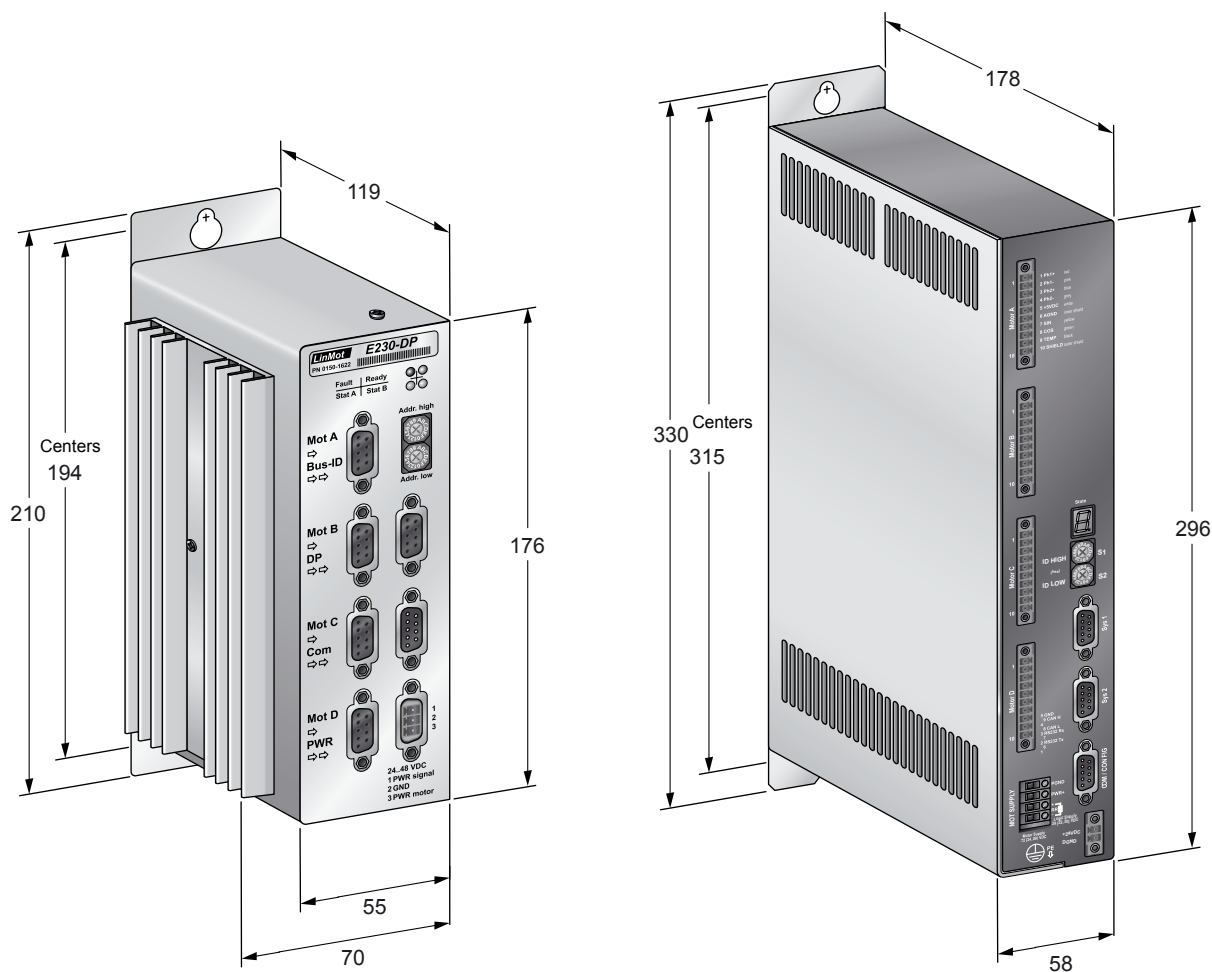


Item	Description	Part Number
B01-04 230VAC/50Hz	Control Box for E100/E1001-AT/MT (230VAC, incl. cable and connectors)	0150-1930
B01-04 115VAC/60Hz	Control Box for E100/E1001-AT/MT (115VAC, incl. cable and connectors)	0150-1931

COM connection cables and USB-converter



Item	Description	Part Number
RS232 PC cable	PC - RS232 connection cable for configuration (1.5m, 9 pin DSUB, f/f, 1:1)	0150-3009
USB-RS232 converter	USB-RS232 converter (0.3m, USB-9 pin DSUB, f)	0150-3110



Dimensions in mm

		E100	E200	E400	E1001	E2001	E4001
Interfaces							
Width	mm	70			58		
Height	mm	210			330		
Height without fixings	mm	175			296		
Depth	mm	120			178		
Weight	kg	1.1	1.2	1.3	2.5	2.6	2.7
Protection Class	IP	40			40		
Storage Temperature	°C	-25..70			-25..70		
Operating Temperature	°C	0..50			0..50		
Max. Case Temperature	°C	65			65		
Max. Power Dissipation	W	22	38	70	80		
Distance between Controllers	mm	50			50		

Item	Description	Part Number
E100-AT	AnalogTrigger Controller 1 Axis (48V/3A)	0150-1601
E200-AT	AnalogTrigger Controller 2 Axis (48V/3A)	0150-1602
E400-AT	AnalogTrigger Controller 4 Axis (48V/3A)	0150-1604
E1001-AT	AnalogTrigger Controller 1 Axis (72V/8A)	0150-2300
E2001-AT	AnalogTrigger Controller 2 Axis (72V/8A)	0150-2301
E4001-AT	AnalogTrigger Controller 4 Axis (72V/8A)	0150-2303
E100-MT	Multi Trigger Controller 1 Axis (48V/3A)	0150-1611
E200-MT	Multi Trigger Controller 2 Axis (48V/3A)	0150-1612
E400-MT	Multi Trigger Controller 4 Axis (48V/3A)	0150-1614
E1001-MT	Multi Trigger Controller 1 Axis (72V/8A)	0150-2304
E2001-MT	Multi Trigger Controller 2 Axis (72V/8A)	0150-2305
E4001-MT	Multi Trigger Controller 4 Axis (72V/8A)	0150-2307
E130-DP	Profibus DP Controller 1 Axis (48V/3A)	0150-1621
E230-DP	Profibus DP Controller 2 Axis (48V/3A)	0150-1622
E430-DP	Profibus DP Controller 4 Axis (48V/3A)	0150-1624
E1031-DP	Profibus DP Controller 1 Axis (72V/8A)	0150-2316
E2031-DP	Profibus DP Controller 2 Axis (72V/8A)	0150-2317
E4031-DP	Profibus DP Controller 4 Axis (72V/8A)	0150-2319
E100-DN	DeviceNet Controller 1 Axis (48V/3A)	0150-1641
E200-DN	DeviceNet Controller 2 Axis (48V/3A)	0150-1642
E400-DN	DeviceNet Controller 4 Axis (48V/3A)	0150-1644
E1001-DN	DeviceNet Controller 1 Axis (72V/8A)	0150-2312
E2001-DN	DeviceNet Controller 2 Axis (72V/8A)	0150-2313
E4001-DN	DeviceNet Controller 4 Axis (72V/8A)	0150-2315
E100-CO	CanOpen Controller 1 Axis (48V/3A)	0150-1669
E200-CO	CanOpen Controller 2 Axis (48V/3A)	0150-1670
E400-CO	CanOpen Controller 4 Axis (48V/3A)	0150-1672
E1001-CO	CanOpen Controller 1 Axis (72V/8A)	0150-2308
E2001-CO	CanOpen Controller 2 Axis (72V/8A)	0150-2309
E4001-CO	CanOpen Controller 4 Axis (72V/8A)	0150-2311